



B.Sc. in Biological Sciences

Department of Biological and Environmental Sciences



كلية الآداب والعلوم
College of Arts and Sciences
جامعة قطر QATAR UNIVERSITY

Biological and Environmental Sciences Department

The Biological and Environmental Sciences Department offers a major in Biological Sciences to fulfill the requirements for a B.Sc. degree offered by the College of Arts and Sciences in Qatar University.

Biological Sciences Major:

We are seeking students who are interested in life sciences and may have a desire to establish a career in life sciences or to follow up with graduate studies.

The Biological Sciences program at Qatar University provides students with a comprehensive and broad education in Biological sciences, yet with the flexibility to fulfill the individual's needs. The strengths of the program include cell and molecular biology, ecology, microbiology, plant and animal physiology.

Choosing the Biological Sciences program allows the student to develop a study plan that is tailored to their individual educational goals. A degree in Biological Sciences will facilitate students to explore the numerous fields of Biology, which can lead to more specialized graduate studies or job opportunities in a wide range of institutions and industries to fulfill the unprecedented advancement in the field and responding to the needs and aspiration of the Qatari society.

The Biological Sciences program aspires to prepare students to keep up with the growth in Qatar's scientific community by offering a strong and competitive interdisciplinary curriculum, which enables students to gain understanding of concepts in both Biology and Chemistry.

Program Curriculum:

The Biological Sciences program has an 8 semester curriculum (4 years of study). The curriculum of the program consists of a set of compulsory and elective courses in the Biology major, the Chemistry minor, and the core curriculum program of QU totaling 120 credit hours (CH).

Objectives

The major in Biological Sciences aims to:

- Develop an understanding of the principles of biological sciences.
- Provide students with intensive laboratory and field experiences.
- Carry out basic and applied research in biological sciences.
- Enhance student abilities to communicate effectively in biological issues.

Learning Outcomes

Graduates of the Biological Sciences major will be able to:

- Define structure and function of organisms.
- Describe the interactions between organisms and their environments.
- Use instrumentation and proper techniques in biological sciences research correctly
- Engage in critical thinking on problem solving activities on a biological topic.
- Demonstrate proficiency in written by giving concise, clear and organized written communication about a biological concept.
- Demonstrate proficiency in oral communication by giving concise, clear, and organized oral presentations on a biological topics.

Admission requirements

Applicants must satisfy QU defined College and Program requirements including the minimum high school percentage requirement.

Detailed Undergraduate admission requirements are available at the following link:

http://www.qu.edu.qa/sites/en_US/students/admission/undergraduate

Declaring the major

Students must satisfy QU requirements for declaring a major including the need to declare the major before completing 36 UG credit hours. In addition, students declaring a major in Biological Sciences must have completed the BIOL 101 course and a minimum of 9 CH in the core curriculum program requirements with a minimum cumulative GPA of 2.00.

Opportunities

Graduates in Biological Sciences find employment in government agencies, non-governmental organizations, and in the private sector in clinical, chemical and research laboratories.

DEGREE REQUIREMENTS

Major in Biological Sciences

A minimum of 120 credit hours are required to complete the major in Biological Sciences, including the following:

- A minimum of 33 credit hours in Core Curriculum requirements
- A minimum of 24 credit hours in Major Requirements
- A minimum of 21 credit hours in Major Supporting Requirements
- A minimum of 24 credit hours in Major Electives
- A minimum of 18 credit hours in minor requirements

Core Curriculum Program (33 CH)

Common package (15 CH)

- ARAB 100 Arabic Language I
- ARAB 200 Arabic Language II
- ENGL 202 English Language I Post Foundation
- ENGL 203 English Language II Post Foundation
- DAWA 111 Islamic Culture

Social/Behavioral Sciences package (3 CH)

Courses in the CCP defined Social/Behavioral Sciences package.

Natural Science/Mathematics package (3 CH)

Courses in the CCP defined Natural Science/Mathematics package.

Humanities /Fine Arts package (3 CH)

Students must complete a minimum of 3 Credit Hours from courses listed in the Qatar and Gulf History Sub-package part of the Humanities/Fine Arts package.

Supplemental College / Program Core Requirements Package (3 CH)

- UNIV 100 First Year Seminar

General Knowledge package (3 CH)

Courses in the CCP defined General Knowledge package.

General Skills package (3 CH)

Courses in the CCP defined General Skills package.

Major Requirements (24 CH)

Students must complete a minimum of 24 credit hours in Major required courses:

- BIOL 101 Biology I
- BIOL 102 Biology II

- BIOL 221 Basic Ecology
- BIOL 241 Microbiology
- BIOL 311 Molecular Biology
- BIOL 351 Plant Anatomy & Physiology
- BIOL 362 Animal Anatomy & Physiology
- BIOL 497 Senior Project

Major Supporting Requirements (21 CH)

Students must complete a minimum of 21 credit hours in major supporting requirements:

- CHEM 101 General Chemistry I
- CHEM 103 Experimental General Chemistry I
- CHEM 209 Fundamentals in Organic Chemistry
- CHEM 351 Basic Biochemistry
- CHEM 352 Experimental Biochemistry
- MATH 101 Calculus I
- PHYS 110 General Physics for Biology
- PHYS 111 Practical Physics for Biology
- STAT 151 Introduction to Applied Statistics

Major Electives (24 CH)

Students must complete a minimum of 24 credit hours in Major elective courses:

- BIOL 211 Cell Biology
- BIOL 212 Genetics
- BIOL 312 Histology
- BIOL 321 Principles of Environmental Biology
- BIOL 322 Desert Biology
- BIOL 344 General Parasitology
- BIOL 412 Genetic Engineering & DNA Technology
- BIOL 421 Ecophysiology
- BIOL 422 Environmental Management & Conservation
- BIOL 442 Biotechnology
- BIOL 444 Immunology
- BIOL 451 Cell & Tissue Culture

Minor Requirements (18 CH)

Students enrolled in the Biological Sciences program must complete the minor in Chemistry to satisfy the program degree requirements.

Study Plan for Biological Sciences

Bachelor of Science in Biological Sciences

First Year (32 credit hours)				
Term	Course #	Course Title	CH	Pre-Requisite
Fall	ARAB 100	Arabic Language 1	3	
	ENGL 202	English Language 1 (Post Foundation)	3	
	DAWA 111	Islamic Culture	3	
	BIOL 101	Biology I	3	
	CHEM 101	General Chemistry I	3	
	CHEM 103	Experimental General Chemistry I	1	CHEM 101
Total Credit Hours in Semester			16	

Term	Course #	Course Title	CH	Pre-Requisite
Spring	ARAB 200	Arabic Language 2	3	ARAB 100
	ENGL 203	English Language 2 (Post Foundation)	3	ENGL 202
	BIOL 102	Biology II	3	BIOL 101
	CHEM 102	General Chemistry II	3	CHEM 101
	CHEM 104	Experimental General Chemistry II	1	CHEM 102 & CHEM 103
	MATH 101	Calculus I	3	
Total Credit Hours in Semester			16	

Second Year (32 credit hours)				
Term	Course #	Course Title	CH	Pre-Requisite
Fall	BIOL 221	Basic Ecology	3	BIOL 102
	BIOL 241	Microbiology	3	BIOL 102
	CHEM 209	Fundamental in Organic chemistry	3	CHEM 101
	PHYS 110	General Physics for Biology	1	
	BIOL	Major Elective	3	
	PHYS 111	Practical Physics for Biology	3	PHYS 110
Total Credit Hours in Semester			16	

Term	Course #	Course Title	CH	Pre-Requisite
Spring	BIOL 311	Molecular Biology	3	BIOL 241
	BIOL 212	Genetics	3	BIOL 101
	CHEM	Minor Elective	3	
	CHEM 351	Basic Biochemistry	3	CHEM 209
	CHEM 352	Experimental Biochemistry	1	CHEM 351
	STAT 151	Introduction to Applied Statistics	3	
Total Credit Hours in Semester			16	

Third Year (32 credit hours)

Term	Course #	Course Title	CH	Pre-Requisite
Fall	BIOL 362	Animal Anatomy & Physiology	3	CHEM 351 & BIOL 102
	BIOL	Major Elective	3	
	BIOL	Major Elective	3	
	CHEM	Minor Elective	2	
	CHEM	Minor Elective	3	
		Core Curriculum Elective	3	
Total Credit Hours in Semester			17	

Term	Course #	Course Title	CH	Pre-Requisite
Spring	BIOL 351	Plant Anatomy & Physiology	3	CHEM 351 & BIOL 102
	BIOL	Major Elective	3	
	BIOL	Major Elective	3	
	CHEM	Minor Elective	3	
	CC Elective	Core Curriculum Elective	3	
Total Credit Hours in Semester			15	

Fourth Year (24 credit hours)

Term	Course #	Course Title	CH	Pre-Requisite
Fall	BIOL	Major Elective	3	
		Core Curriculum Elective	3	
		Core Curriculum Elective	3	
		Core Curriculum Elective	3	
	BIOL 497	Senior Project		Departmental Approval
Total Credit Hours in Semester			12	

Semester 8 (Spring) 12 Credit Hours [CH]

Term	Course #	Course Title	CH	Pre-Requisite
Spring	BIOL	Major Elective	3	
	CHEM	Minor Elective	3	
		Core Curriculum Elective	3	
	BIOL 497	Senior Project (continued)	3	
Total Credit Hours in Semester			12	

MINOR IN BIOLOGICAL SCIENCES

The Department of Biological and Environmental Sciences offers an undergraduate minor in Biological Sciences that is intended to increase the programs of students whose major fields are outside the biological sciences and who are interested in obtaining a broad-based perspective in biology.

Declare the minor

Applicants for the minor in Biological Sciences must satisfy QU requirements for declaring a minor.

Minor in Biological Sciences (18 CH)

Students seeking a minor in Biological Sciences must complete a minimum of 18 credit hours, including the following:

- A minimum of 12 credit hours in Minor Requirements
- A minimum of 6 credit hours in Minor Electives



Contact Information

College of Arts and Sciences

Department of Biological and Environmental Sciences

P.O. Box 2713 Doha, Qatar

Tel: (+974) 4403-4534 Fax: (+974) 4403-4531

Email: headdepbiological@qu.edu.qa

<http://www.qu.edu.qa/artsscience/bioenvi/biologicalprogram/index.php>